AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application.

COMPLETE LISTING OF CLAIMS:

Claims 1-8 : (Canceled)

Claim 9 : (Previously Presented) An apparatus for providing a communications network resource to a plurality of classes of use of a network, a different level of service being associated with each class of use, the apparatus comprising:

a) a demand estimator for estimating a worst case effective bandwidth demand for each class by computing two demand estimates of effective bandwidth for two different timescales, one of the demand estimates determining a short-term burstiness within a traffic envelope, the other of the demand estimates determining a long-term variance between traffic envelopes, the greater of the two demand estimates giving the estimated worst case effective bandwidth demand;

b) a dynamic resource allocator for allocating to each class a proportion of the network resource, the proportion allocated being dependent on the estimated worst case effective bandwidth demand for each class, the allocation optimizing use of the available network resource while at the same time ensuring that the level of service of each class is observed; and

c) a communications network element for providing to each class the proportion of the network resource allocated to it.

Claim 10 : (Previously Presented) The apparatus according to claim 9, wherein the network resource comprises bandwidth of a communications channel fed by the network element or buffer depth in the network element.

Claim 11 : (Canceled)

Claim 12 : (Canceled)

Claim 13 : (Currently Amended)

The apparatus according to claim 9, wherein a first effective bandwidth, E_{long}, is given by $E_{long} = \bar{R}_T + \alpha_{long}\,\sigma_T$ and a second effective bandwidth, E_{short}, is given by $E_{short} = \max_{k=1,2,\ldots,r} \left\{ \frac{(\bar{R}_k + \alpha_{short}\sigma_k)kT}{kT - \frac{q}{C}} \right\}$ and are used to give a worst case effective bandwidth estimate E of the traffic flow described by the traffic envelope E=max $\{E_{long}, E_{short}\}$, wherein the bandwidth terms are defined in the present specification.

Claim 14 : (Previously Presented) The apparatus according to claim 9, wherein a best-effort service is provided as one of the classes.

Claim 15 : (Previously Presented) The apparatus according to claim 9, wherein voice or video data is transferred across the network.

Claim 16 : (Previously Presented) A method of providing a communications network resource to a plurality of classes of use of a network, a different level of service being associated with each class of use, the method comprising the steps of:

a) estimating a worst case effective bandwidth demand for each class by computing two demand estimates of effective bandwidth for two different timescales, one of the demand estimates determining a short-term burstiness within a traffic envelope, the other of the

demand estimates determining a long-term variance between traffic envelopes, the greater of the two demand estimates giving the estimated worst case effective bandwidth demand;

b) allocating to each class a proportion of the network resource, the proportion allocated being dependent on the estimated worst case effective bandwidth demand for each class, the allocation optimizing use of the available network resource while at the same time ensuring that the level of service of each class is observed; and

c) providing by a communications network element to each class the proportion of the network resource allocated to it.